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PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF AGRICULTURE

BOYS AND GIRLS'
FIELD-CROP COMPETITIONS

IN CONNECTION WITH FARMERS' INSTITUTES

BULLETIN No. 57



THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA

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1914.



DEPARTMENT OF AGRICULTURE, .

VICTORIA, B.C., February 26th, 1914.

Hon. Price Ellison,

Minister of Agriculture.

SIR,—I have the honour to submit herewith for your approval Bulletin No. 57, prepared by J. C. Readey, Soil and Crop Instructor, dealing with potato-growing, and containing rules and regulations, score-cards, and prize-lists for the Boys and Girls' Potato Competitions.

I have the honour to be,

Sir,

Your obedient servant,

WM. E. SCOTT,

Deputy Minister of Agriculture.

THE OBJECT of these Competitions is to train the heads and the hands of the boys and girls; to give them broad minds and big hearts; to improve their health by giving them an interest in outdoor life; and to encourage on the part of all British Columbia citizens a stronger and more intelligent interest in Agriculture.

OUR MOTTO: "*Better Boys and Girls—Better Crops.*"

PROVINCE OF BRITISH COLUMBIA.

DEPARTMENT OF AGRICULTURE.

(LIVE-STOCK BRANCH.)

HON. PRICE ELLISON,

Minister of Agriculture.

WM. E. SCOTT,

Deputy Minister of Agriculture.

W. T. McDONALD, B.S.A., M.S.A.,

Live-stock Commissioner.

H. RIVE, B.S.A.,

Chief Dairy Instructor.

J. R. TERRY,

Chief Poultry Instructor.

A. KNIGHT, V.S.,

Chief Veterinary Inspector.

H. E. WALKER, B.S.A.,

Agriculturist.

J. C. READEY, B.S.A.,

Soil and Crop Instructor.

H. E. UPTON,

Poultry Instructor.

T. A. F. WIANCKO,

Dairy Instructor.

S. A. K. WHITE, V.S.,

Veterinary Inspector.

W. W. ALTON, V.S.,

Veterinary Inspector.

B. R. ILSLEY, V.S.,

Veterinary Inspector.

WM. J. BONAVIA,

Secretary of the Department.



[Courtesy of Steele Briggs Seed Co.]

A good type of potato.

BOYS AND GIRLS' FIELD-CROP COMPETITIONS.

INTRODUCTORY.

DEAR BOYS AND GIRLS —I am so pleased to have a chat with you. Hope we may have many more. What a grand Province this is, and such a place to grow big, strong men and women.

This little bulletin is written in an attempt to help you with your potato-plot. The best that can be done in this way is to give a few general instructions. After you have read this bulletin you should have a good long chat with father or some other good potato-grower, because there are many things about potato-growing that cannot be learned from a bulletin.

When you think it over, boys and girls and potatoes are much alike in many ways, aren't they?—Big and little, long and short, stout and slim; both require lots of room in which to grow, plenty of good food, and plenty of water, sunlight, and fresh air. Every boy and girl wants to grow up to be strong and healthy, good-looking, with strong, bright eyes, clear skin, healthy lungs, and to be "white" all through. Keep all these things in mind when working in your potato-plot, and grow your potatoes under the conditions and with those qualities you would like to have yourself.

You will find the names and addresses of all the members of the staff of the Live-stock Branch, Department of Agriculture, on the first page of this bulletin. Besides these, there is the Chief of the Fruit Branch and all his assistants, and I am sure every one of us would be so pleased to have a letter from you. Ask us questions about live-stock, dairying, poultry, soils, crops, or fruit, and we will answer your questions if we possibly can.

Hoping to hear from you,

Yours very truly,

J. C. READEY,

Soil and Crop Instructor.

SELECTION OF THE PLOT.

(1.) Any kind of soil, from a light, sandy loam to a *well-drained* stiff clay, will grow good potatoes, provided it holds *enough* but not *too much* water. The soil should be *moist*, but not *soaked*.

(2.) A piece of sod, preferably clover-sod, ploughed deep (8 inches) in the fall, is desirable, because the soil is likely to be rich, easily worked, porous, and in condition to hold moisture.

(3.) If possible, choose a location for the plot near to the house. It may then be seen more frequently, and less time will be required to take care of it.

SELECTING THE VARIETY AND THE "SEED."

(1.) Choose some well-tried variety. Do not pay fancy prices for something new. The same variety may not suit every district, but the Burbank for heavier soils, and the Carmen No. 1 for lighter soils, generally give good results. Your choice will be governed by local conditions and requirements and the market demands.

(2.) Before selecting the seed a study of the score-card printed in this bulletin should be made. Plant the *type* of potato you wish to produce. Considerable varia-

tion in size may be allowed. A good seed-potato may be described as follows: Medium size, with strong, shallow eyes, clear, fairly thin skin, brown to white colour, flesh clear, without dark rings or spots, weight about 10 oz.

PREPARATION OF THE PLOT.

Plough deeply in the fall; cultivate deeply, using a spring-tooth cultivator once or twice if possible. In the dry districts harrow frequently to conserve the moisture.

In the spring plough lightly again if the ground is baked. Cultivate early in the spring, and do it thoroughly. If necessary to cultivate deeply, use a spring-tooth cultivator, not the disk. The disk inverts the soil too much, and allows it to dry out. Keep the soil stirred on top with the drag-harrow until planting-time.

TREATING THE SEED.

To prevent the potatoes from being scabby, immerse the seed for two hours in formalin and water, 1 oz. of formalin to 2 gallons of water. Spread the potatoes out to dry after treatment. Potatoes should not be sown two years in succession on the same ground, because potato-diseases may be carried over in the soil and affect the new crop.

CUTTING THE SEED.

The young potato-plant depends upon the flesh of the potato for its start in life. The finer and richer the soil, if it is drained and warm, the sooner the plant can support itself. But, other conditions being equally favourable, the potato-plant that has the largest amount of potato upon which to live for a start will give the highest yield. Cutting the potato into sets having one or two strong eyes, leaving as much of the potato attached as possible, is the best general practice. Reject all seed showing brown or black rings in the flesh. The "sets" should be planted immediately after being cut. If this is not possible, they should be kept in a cool, moist place until planting-time, or sprinkled with slaked lime or some such substance, to prevent their drying out.

RATE OF SEEDING.

The amount of seed required per acre depends, of course, on the width of planting and the weight of the sets. Good general practice seems to favour rows 36 inches apart, with the potatoes about 12 inches apart in the row. If 2-oz. "sets" are used, it will require 1,800 lb. of seed to plant an acre in this way. The richer the soil, the closer in the row the potatoes may be planted, down to 6 inches.

Question: If potatoes are planted 12 x 36 inches apart, and each hill produces ten marketable potatoes, averaging 10 oz. in weight each, what would be the yield per acre?

PLANTING.

Soil intended for potatoes should be cultivated deeply, and the potatoes planted from 4 to 6 inches deep. Hilling-up should not be necessary for best results, because the necessity indicates that the soil is not cultivated deep enough or is too wet. Of course, where proper drainage cannot be secured, hilling-up may be necessary. Plant the potatoes in furrows or drills 36 inches apart, from 6 to 18 inches apart in the row, according to the condition of the soil.

FERTILIZING THE PLOT.

Barnyard manure is about the best fertilizer to use. The objection to it is that it produces conditions favourable to the growth of the potato-scab. It does not produce the scab, but the "scab" spores may be in the soil, and the manure will increase its growth. Sometimes the spores get into manure through feeding scabby potatoes to the stock. If the soil, seed, and manure is free from scab, use the manure freely, 20 to 30 tons per acre at least. If applied in the spring, it should be well rotted.

Where the manure is scarce, commercial fertilizers may be used to help out. The following amounts will serve as a guide:—

Sodium nitrate	200 lb. per acre.
Potassium sulphate	300 "
Superphosphate	450 "
Total	950 "

Apply the potassium sulphate and superphosphate early in the spring, and harrow in. Do not plough it in. Apply half of the nitrate at time of planting, and the balance after the plants are a few inches high. Do not allow the nitrate to touch the plants while they are wet.

All the fertilizers should be sown broadcast.

TIME TO PLANT.

The date of planting will depend on whether the late or early varieties are grown, and on local season conditions. If there is danger of blight in the district, plant early, because the further advanced the potato is when the blight strikes, the less will be the damage done. It is impossible to give definite instructions as to the best time to plant, but plant the potatoes at such a time that the growth will be made during the most favourable season.

SPRAYING FOR LATE BLIGHT.

There is no reason why the potato-crop of British Columbia should suffer from the ravages of this disease if the potatoes are not planted on the same ground two years in succession, and the crop is sprayed with Bordeaux mixture. Preparation and use of this mixture is outlined in Bulletin No. 56 of the British Columbia Department of Agriculture. A copy of this bulletin has been sent to every member of Farmers' Institutes in the Province. If you have none in your home, write to us for a copy.

SELECTING NEXT YEAR'S SEED.

If you study your plot carefully you will notice quite a difference between the plants. Find the same types of plants in your father's potato-field, and ask for permission to dig up a hill or two of each type, and notice the type that gives the best potatoes. Of course, your plot is small, and digging a number of hills would affect your yield a little; but if you cannot experiment on your father's crop, do so on your own. You will likely find that where you get one or two straight, clean stalks with fairly light-green leaves, that there you will find the cleanest, most even hill of potatoes. Thick-set, heavily branched, dark-green plants usually give a large percentage of small potatoes. When you have decided which type of plant is giving you the best returns, put a stake at quite a number of this kind of plant, and when digging-time comes, dig these hills first, and from the product of these hills select your "seed" for next year. It would be very interesting to keep the potatoes from the different hills separate, and plant each in a separate row next year, and note which row gives you the best returns. If you select the *best* potatoes from the *best* hills for a year or two, and do it carefully, you will surprise yourself and your neighbours with the result. Think the matter over.

DIGGING.

Potatoes dug just a little before maturity are believed to be better for "seed" than fully matured tubers. But for the marketable potatoes allow the crop to mature. The method of digging will depend upon the area planted, and is not important so long as the tubers are not damaged in the operation. Large areas are more profitably handled by the digger, smaller areas may be ploughed out, but small plots may be dug with a digging-fork or hoe.

A FEW POINTS.

Grade the potatoes at time of digging, if possible. Discard all potatoes that are diseased, damaged, or that are 2 inches or less in diameter.

- (1.) All soil does not contain enough plant-food to grow a paying crop of potatoes.
- (2.) The cost of labour is the same, whether the soil is rich or poor.
- (3.) Potatoes, like animals, must have plenty of food and water.
- (4.) Good tubers from good hills produce better results as seed than tubers chosen at random.
- (5.) Be honest. Get rid of the idea that something may be had for nothing. It takes labour, manure, good seed, and thought to produce a good crop.
- (6.) Don't be above taking advice from others, especially from elderly people. Think matters over, and practise what you believe to be profitable.
- (7.) Put honest goods on the market. Co-operate for the good of your community. Besides being right, it pays in the end.

RULES AND REGULATIONS.

1. Any Farmers' Institute desiring to organize these competitions must notify the Soil and Crop Division, Live-stock Branch, Department of Agriculture, Victoria, on or before May 10th. (Notices received later than May 10th cannot be considered.)

2. Any Institute deciding to organize a Boys and Girls' Competition shall appoint a committee composed of three of their members and the President and Secretary of the Institute, who shall make and carry out the necessary arrangements for the holding of the competition.

3. No Institute may hold more than one competition within its district in any one year.

There must be not less than six *bona-fide* competitors in each competition.

Only one entry will be allowed each competitor.

4. Competitors must not be under ten or over eighteen years of age on May 10th, 1914, the date on which the entries close.

5. The plots entered for competition must be exactly $\frac{1}{10}$ acre in area (16 square rods, 484 square yards, or 4,356 square feet). A margin of $1\frac{1}{2}$ feet should be allowed all around the plot, but this margin should be included in the $\frac{1}{10}$ acre.

6. All competitors within the same Institute district must use the same variety of potato. The variety shall be decided by the committee appointed by the Institute.

The Department suggests that, wherever possible, the Burbank or Carmen No. 1 should be grown.

7. Each and every competitor within the same Institute district shall co-operate within that district in the disposal of his or her surplus crop by delivering for sale to the salesman, hereinafter provided for, at least one-quarter of the marketable potatoes from the plot. The total amount of the product thus contributed shall be disposed of at as good a price as possible by a salesman appointed by the committee for that purpose, and the total proceeds, less 5 per cent. commission to cover salesman's expenses, shall be paid *pro rata* to the competitors contributing the potatoes.

Any competitor failing to comply with this condition shall forfeit any prize-money he may earn, and shall be debarred from taking part in any future Boys and Girls' Competition.

8. An agent or representative of the Department of Agriculture will inspect and score the growing crop of each competitor.

9. A disinterested person (school-teacher, clergyman, or Justice of the Peace), not a relative of any of the competitors, and appointed by the Institute committee, shall be present at the measuring of the plot, the sorting of the potatoes, and the weighing of the crop. This person must sign the statement attached to the crop and financial statement of each competitor within the Institute district.

10. Blank forms for reports will be supplied by the Department of Agriculture.

11. Each competitor shall ship to the Soil and Crop Instructor, Department of Agriculture, Victoria, by the cheapest way possible (parcel post, express, or freight), 20 lb. of potatoes from his plot. These may be shipped at the Department's expense, and will be scored for market quality. The exhibits must reach Victoria in time for the Dominion Exhibition this year. The exhibits shall become the property of the Department of Agriculture.

12. Each competitor must do all the work himself or herself, except that the girls and younger boys may be assisted with such work as ploughing, etc.

13. An accurate crop report and financial statement, showing methods employed, expenses, returns, and profits, must be made by each competitor. The financial report will include rent of land, and cost of labour, seed, manure, spraying, etc. Reports must reach the Soil and Crop Instructor, Department of Agriculture, not later than the date of the Dominion Exhibition.

14. *Scale of Charges to be used by all Competitors:—*

	West of Cascade Mountains.	East of Cascade Mountains.
Rent of land	\$32.00 per acre.....	\$12.00 per acre.
Each horse	20 cents per hour.....	20 cents per hour.
Each man	30 " "	30 " "
Each boy or girl.....	15 " "	15 " "
Stable manure.....	\$2.00 per two-horse load....	\$1.25 per two-horse load.

Give actual cost of fertilizer, seed, spray material, etc.

15. Due allowance will be made for the reports in awarding prizes. Prizes will be awarded on the following basis:—

- (1.) Report by Field Inspector 100 points.
- (2.) Score on 20-lb. exhibit sent to Victoria 100 "
- (3.) Certified reports 150 "

NOTE.—In judging the certified reports, 75 points will be allowed for the largest net profits, and 75 points for accuracy, completeness, and neatness of reports.

16. *Prizes.*—The following prizes will be offered for each competition:—

1st—"The Potato" (Grubb & Gullford) and	\$5 00
2nd—"The Potato" (Grubb & Gullford) and	4 00
3rd—"The Potato" (Grubb & Gullford) and	3 00
4th—"The Potato" (Grubb & Gullford) and	2 00
5th—"The Potato" (Grubb & Gullford) and	1 00
Total	\$15 00

A ribbon badge will be awarded to each and every competitor.

Grand Provincial Prizes.—To the boy taking the highest total score in the Province, a pure-bred helper calf of the breed of his choice. To the girl taking the highest total score in the Province, a high-grade sewing-machine.

SCORE FOR STANDING CROP.

Uniformity of stand of crop	25
Vigour of crop	20
Method and thoroughness of cultivation	20
Freedom from blight, disease, or insects	20
Evidences of care in the selection and care of plot	15
Total	100

**SCORE-CARD TO BE USED ON THE EXHIBIT OF POTATOES SENT TO
VICTORIA.**

RAW POTATOES.

Particulars.	Value.	Score.
Uniformity of exhibit—	Points.	Points.
Uniform in size, colour, shape, and character of eyes.....	20	
Trueness to type—		
Each potato typical of the variety to which it belongs	10	
Shape of tuber—		
Flat, round, or oval preferred	15	
Size of tuber—		
Medium-sized (about 10 oz.)	15	
Eyes—		
Well marked, not too deep or too numerous.....	5	
Skin—		
Of a colour typical of the variety, healthy, fairly thin, not sunburned	5	
Texture—		
Fairly fine and brittle	5	
Soundness—		
Flesh not soft, flabby, or hollow; no discolorations	15	
Freedom from blemishes	10	
Total	100	

COOKED POTATOES.

Particulars.	Value.	Score.
External appearance—	Points.	Points.
Clean, smooth, jackets very tight. If jackets have been removed, potato should be intact	20	
Quality and condition of flesh—		
Mealy, not soggy	25	
Colour of flesh—		
Yellowish tinge or dark to white, preferably white.....	15	
Flavour—		
Nutty, crisp.....	20	
Time required for cooking.....	10	
Uniformity of all tubers in cooking	10	
Total	100	

CROP REPORT ON POTATOES, 1914.

Full name of competitor.....
 Age on May 10th, 1914.....
 Name of parent or guardian.....
 Post-office address.....
 Variety of potatoes planted on plot.....
 Where was the seed obtained?.....
 Did your plot consist of exactly 1/10 acre?.....
 What were the exact measurements?.....
 Number of rows..... Distance apart of rows..... Number of
 plants in each row.....
 Distance apart of each plant in the rows.....
 Length of each row.....
 Character of soil.....
 Character of subsoil.....
 What crop was grown on land in 1913?.....
 What crop was grown on land in 1912?.....
 How long has land been cropped?.....
 Date of going on the land this spring.....
 Describe cultivation before planting.....
 Describe condition of land at time of planting.....
 How many two-horse loads of manure did you apply on your plot?.....
 Kind of manure applied.....
 Did you use any commercial fertilizer? If so, what kind, and how much?.....

 Date of planting plot.....
 Did you use whole or cut potatoes?.....
 If cut potatoes were used, how soon after cutting were they planted?.....

 Did you sprinkle lime or land-plaster on the sets after cutting?.....
 Did you treat the tubers with formalin to prevent scab?.....
 How was planting done (by hand, by machine, in furrow, or dropped in holes dug
 by hoe)?.....
 How deep did you plant?.....
 Number of pounds planted.....
 Did all the sets grow?..... Were some plants weaker than others?.....
 Give date when potatoes came through the ground.....
 How many days from planting?.....
 Did they come through evenly?.....
 How many times did you cultivate between planting and digging?.....
 Give dates.....
 Did you cultivate after each heavy rain?.....
 Did you spray for late blight?..... Give dates.....

 Describe any damage to the tops that you noticed.....
 How do you account for the damage?.....
 Describe condition of tops at time of digging.....
 Were they frost-bitten?..... If so, give date of frost.....
 Date of digging.....
 Did you irrigate your plot? If so, give dates.....
 Did you select any specially good hills from which to select the tubers to plant next
 year?.....
 How many days from planting to digging?.....
 Number of pounds of marketable potatoes (over 2 inches and sound).....
 Number of pounds of cull potatoes.....

Were your friends and neighbours interested in your plot?
 Did you enjoy the work?
 The above statements are correct.
 (Signed.) Competitor.
 Disinterested party.

FINANCIAL REPORT.

EXPENSES.

Rent of land at—
 East of Cascades, \$12 per acre
 West of Cascades, \$12 per acre
 Cost of labour—
 (a.) Horses (20 cents each per hour)
 (b.) Competitor (15 cents per hour)
 (c.) Other assistance (30 cents per hour)
 Cost of manure—
 East of Cascades, \$1.25 per load
 West of Cascades, \$2 per load
 Cost of commercial fertilizers
 Cost of seed
 Cost of irrigation
 Cost of spraying material
 Total cost\$

RECEIPTS.

Total value of saleable potatoes @ \$20 per ton\$
 Total value of cull potatoes @ \$5 per ton
 Total value\$

STATEMENT OF PROFIT AND LOSS.

Total value of crop\$
 Total cost of production\$
 Net profit
 Net cost of producing 1 ton
 Net profit per acre\$

The above statement is correct.
 (Signed.) Competitor.
 Disinterested party.

BOYS AND GIRLS' COMPETITION, 1914.

ENTRY FORM.

Name of Institute
 Date

To the Soil and Crop Instructor,
 Department of Agriculture, Victoria.

We beg to acknowledge receipt of Bulletin No. 57, Boys and Girls' Potato Competition, and to state that our institute intends holding one of these competitions during the season of 1914.

The undersigned have signified their desire to compete and to comply with the rules and regulations governing the competition.

Competitor's Name.	Age on May 10th, 1914.	Address.

(Signed.), *Secretary.*

ACKNOWLEDGMENTS.

The Division acknowledges assistance from the literature of the Ontario and United States Departments of Agriculture in preparing this Bulletin.

BULLETINS AND CIRCULARS AVAILABLE.

Date issued.	No.	Name.
May 21st, 1901	8	Ferling Farm Animals (Dairy Cows).
November, 1908	25	Orchard Cleansing.
July 10th, 1913	26	Practical Poultry-raising. (4th Edition.)
March 17th, 1911 ...	30	Guide to Bee-keeping.
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March 8th, 1913	51	Information for Fruit-growers.
April 15th, 1913	52	Annual Report, Advisory Board of Women's Institutes.
November 18th, 1913	53	Care of Young Children.
November 20th, 1913	55	Care and Marketing of Eggs.
December 13th, 1913	56	Field-crop Competitions, 1913.
February 26th, 1914	57	Boys and Girls' Field-crop Competitions.
AGRICULTURAL DEPARTMENT CIRCULARS.		
December 4th, 1912	2	Results of Field-crop Competition, 1912.
April 29th, 1913	4	Hints on Caring for School Gardens.
December, 1913	5	Field-crop Competitions, 1913-14.
June 12th, 1911	..	How to grow Tobacco from Seed.
CIRCULAR BULLETINS.		
April 29th, 1913	2	Tuberculosis in Poultry. (2nd Edition.)
July 23rd, 1913	3	Construction of Fresh-air Brooders. (2nd Edition.)
October 14th, 1913 ..	4	Management of Turkeys.
December 13th, 1913	5	Clover Dodder.
REPORTS.		
May 9th, 1913	..	Fourteenth Annual Report, Farmers' Institutes, 1912.
September 5th, 1913	..	Fourth Annual Report, Agricultural Fairs Association.
September 22nd, 1913	..	Report of Meeting, British Columbia Entomological Society.
June, 1913	..	British Columbia Dairymen's Report.

VICTORIA, B.C.:

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1914.